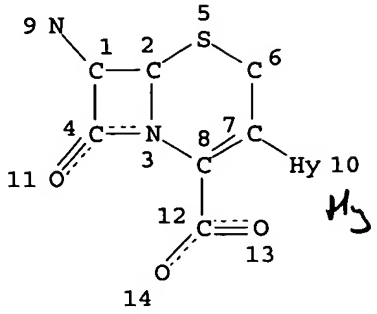
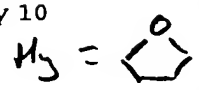
Search #1 $R_2 = R_3 = H$


```
=> d que l7
L1                STR
```



Initial structure allows R_2 & R_3 to be anything.

Hy = 

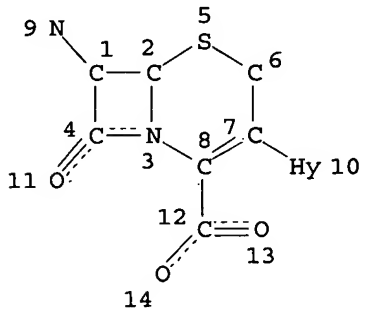
Point of Contact:
Thomas G. Larson, Ph.D.
703-308-7309
CM1, Rm. 6 B 01

```
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
GGCAT   IS MCY  SAT  AT  10
DEFAULT ECLEVEL IS LIMITED
ECOUNT  IS E4 C  E1 O  AT  10

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS  14

STEREO ATTRIBUTES: NONE
L3          148 SEA FILE=REGISTRY SSS FUL L1
L4                STR
```

Initial search produces subset of 148 hits



this structure limits $R_2 = R_3 = H$

```
NODE ATTRIBUTES:
CONNECT IS E1  RC AT   9
CONNECT IS E1  RC AT  14
DEFAULT MLEVEL IS ATOM
GGCAT   IS MCY  SAT  AT  10
DEFAULT ECLEVEL IS LIMITED
ECOUNT  IS E4 C  E1 O  AT  10

GRAPH ATTRIBUTES:
RSPEC I
NUMBER OF NODES IS  14

STEREO ATTRIBUTES: NONE
L6            1 SEA FILE=REGISTRY SUB=L3 SSS FUL L4
L7            1 SEA FILE=CAPLUS ABB=ON  PLU=ON  L6

=> D IBIB ABS HITSTR
```

Connectivity set to Exactly 1 @ 9 & 14 - remaining open positions can only be H (otherwise connat is ≥ 1).

Generic hy @ 10 must have Exactly 4 Carbons (E4 C) and exactly 1 oxygen (E1 O). It must be monocyclic (Mcy) and saturated (sat).

subset search of subset L3 using str L4 produces 1 hit in Registry. Searching CAPLUS with Registry answer set also produces 1 hit.

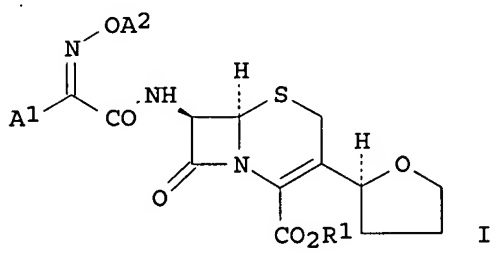
L7 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2002:449688 CAPLUS
DOCUMENT NUMBER: 137:33161
TITLE: Coupling process and intermediates useful for preparing cephalosphorins
INVENTOR(S): Colberg, Juan Carlos; Donadelli, Alessandro; Fogliato, Giovanni; Zenoni, Maurizio
PATENT ASSIGNEE(S): Pfizer Products Inc., USA
SOURCE: PCT Int. Appl., 33 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

Looks like your applicants' work.

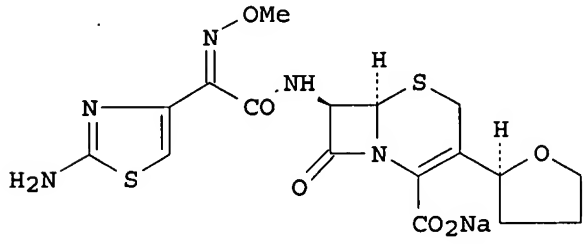
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002046198	A1	20020613	WO 2001-IB2225	20011122

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

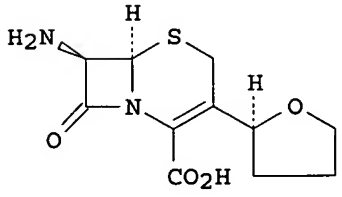
PRIORITY APPLN. INFO.: US 2000-251014P P 20001204
OTHER SOURCE(S): MARPAT 137:33161
GI



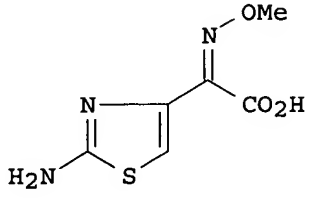
I



II



III



IV

Searched by Thom Larson, STIC, 308-7309

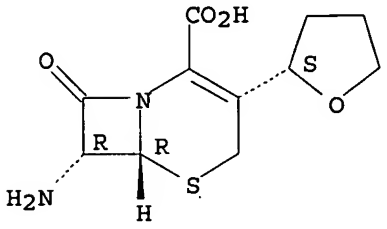
AB This invention relates to a novel process for the prepn. of 3-cyclic-ether-substituted cephalosporins, such as I [CO2R1 =carboxylic acid or a carboxylate salt; A1 = aryl, heteroaryl, heterocyclyl; A2 = H, alkyl, cycloalkyl, aryl, etc.], via amidation reactions. Thus, cephalosporin II was prepd. in 80% yield by amidation of amine III with the acid anhydride of acid IV using O,O-di-Et hydrogenphosphorothioate in a Me2CO/H2O soln.

IT **436100-71-9P**
RL: IMF (Industrial manufacture); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(process for the prepn. of intermediates via amidation which are useful for prepg. cephalosphorins)

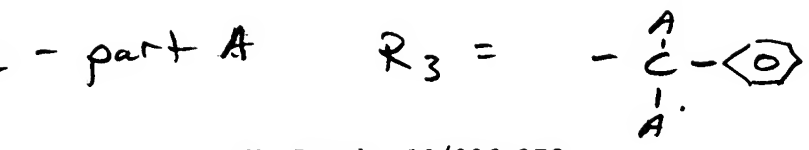
RN 436100-71-9 CAPLUS

CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-amino-8-oxo-3-[(2S)-tetrahydro-2-furanyl]-, (6R,7R)- (9CI) (CA INDEX NAME)

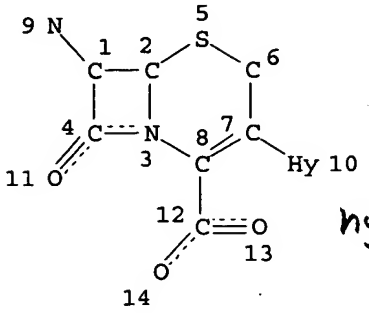
Absolute stereochemistry.



REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

Search #2 - part A $R_3 =$ 

=> d que 16
L1 STR



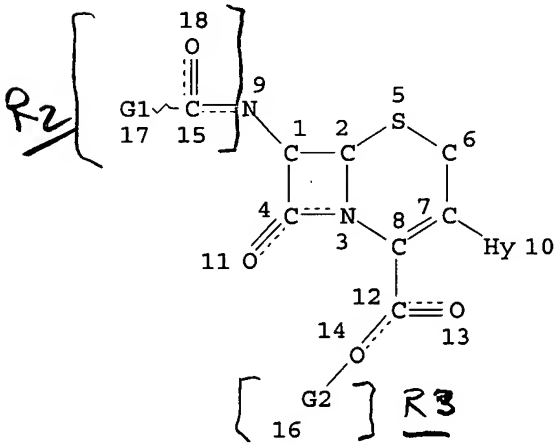
Hy = 

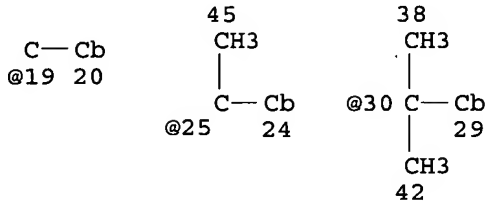
Initial search same as in part 1 — R_2 & R_3 left open

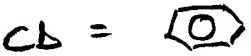
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
GGCAT IS MCY SAT AT 10
DEFAULT ECLEVEL IS LIMITED
ECOUNT IS E4 C E1 O AT 10

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 14

STEREO ATTRIBUTES: NONE
L2 148 SEA FILE=REGISTRY SSS FUL L1 Initial search results.
L3 STR





Cb = 

VAR G1=H/C/N/O
VAR G2=19/25/30 — R3 includes substructures with attachment points @ #19, 25 & 30.
NODE ATTRIBUTES:
CONNECT IS E2 RC AT 19 — Open bonds on 19 are limited to H only.
CONNECT IS E1 RC AT 25 — open bond on 25 is limited to H only.
DEFAULT MLEVEL IS ATOM
GGCAT IS MCY SAT AT 10 — generic hy group @ 10 is limited to being monocyclic and unsaturated.
GGCAT IS MCY UNS AT 20
GGCAT IS MCY UNS AT 24
GGCAT IS MCY UNS AT 29 } generic group Cb @ 20, 24, & 29 is limited to being monocyclic and unsaturated.
DEFAULT ECLEVEL IS LIMITED
ECOUNT IS E4 C E1 O AT 10 — Hy @ 10 has exactly 4 C and 1 O.
ECOUNT IS E6 C AT 20
ECOUNT IS E6 C AT 24 } - Cb @ 20, 24, 30 has exactly 6 C

ECOUNT IS E6 C AT 29

GRAPH ATTRIBUTES:
RSPEC I
NUMBER OF NODES IS 27

STEREO ATTRIBUTES: NONE
L5 32 SEA FILE=REGISTRY SUB=L2 SSS FUL L3
L6 7 SEA FILE=HCAPLUS ABB=ON PLU=ON L5

search subset L2 with structure L3 produces 32 hits. Searching Hcaplus with Registry answer set produces 7 hits.

=> D IBIB ABS HITSTR 1-7

L6 ANSWER 1 OF 7 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2002:104661 HCAPLUS
DOCUMENT NUMBER: 136:151036
TITLE: Process for the preparation of cephalosporin compounds and their intermediates
INVENTOR(S): Burton, George; Best, Desmond John; Gasson, Brian Charles; Osborne, Neal Frederick; Walker, Graham
PATENT ASSIGNEE(S): Pfizer Inc., USA
SOURCE: Eur. Pat. Appl., 22 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1178049	A1	20020206	EP 2001-306325	20010723
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
US 2002058806	A1	20020516	US 2001-918152	20010730
JP 2002105083	A2	20020410	JP 2001-233551	20010801

PRIORITY APPLN. INFO.: GB 2000-19124 A 20000803
GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

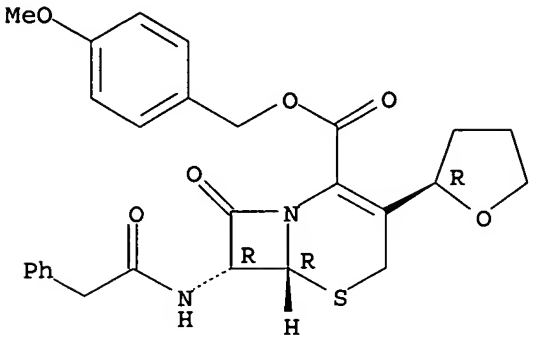
AB A process for prepg. cephalosporins I (R1 = H, OMe, formamido; R2 = acyl; CO2R3 = carboxy group or CO2- or readily removable carboxy protecting group; R4 = H, or up to four substituents from alkyl, alkenyl, alkynyl, alkoxy, halogen, amino, alkyl(acyl)amino, CO2R, CONR2, SO2NR2 (R = H, C1-6 alkyl), aryl, heterocycle, etc.; X = S, SO, SO2, O, CH2; m = 1-2; dotted lines indicate a 2- or 3-cephem system) was accomplished via the cyclization of II. Thus the 3-(R and S)-tetrahydrofuran-2-yl-2-em compds. III were prepd. and the S isomer was converted to the 3-(S)-tetrahydrofuran-2-yl-3-em III in several steps.

IT **141194-60-7P**
RL: IMF (Industrial manufacture); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(process for prepg. cephalosporin compds. and their intermediates)

RN 141194-60-7 HCAPLUS
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 8-oxo-7-[(phenylacetyl)amino]-3-[(2R)-tetrahydro-2-furanyl]-,

(4-methoxyphenyl)methyl ester, (6R,7R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

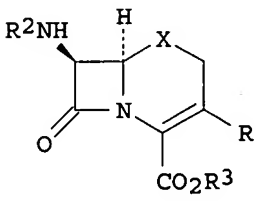


REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

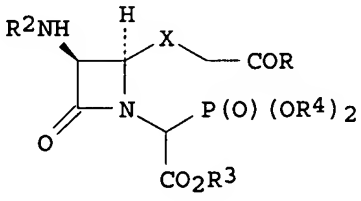
L6 ANSWER 2 OF 7 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1997:140924 HCAPLUS
DOCUMENT NUMBER: 126:144046
TITLE: Beta-lactam preparation
INVENTOR(S): Harris, Michael Anthony; Saunders, Richard Neville
PATENT ASSIGNEE(S): Pfizer Limited, UK
SOURCE: Brit. UK Pat. Appl., 15 pp.
CODEN: BAXXDU
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 2300856	A1	19961120	GB 1995-10126	19950516

OTHER SOURCE(S): CASREACT 126:144046; MARPAT 126:144046
GI



I

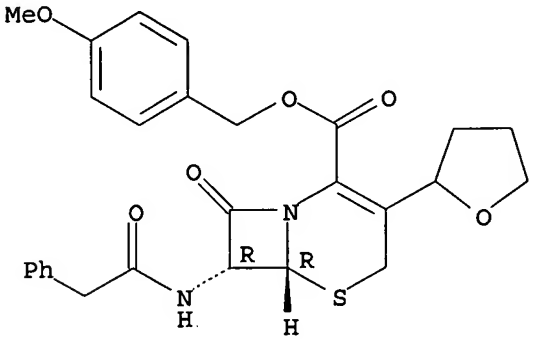


II

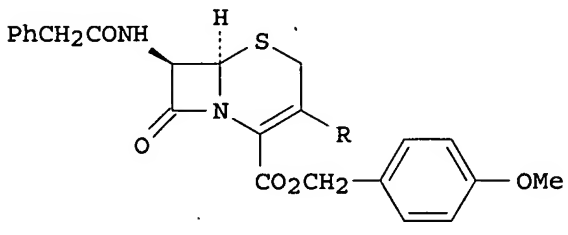
AB Title compds. I [R = substituent; R1 = H, OMe, NHCHO; R2 = acyl; CO2R3 = CO2H, CO2-; R3 = protecting group; X = S, SO, SO2, O, CH2] are prepd. by base-induced cyclization of an azetidinone II [R4 = alkyl, aryl]. II are prepd. from the halide and P(OR4)3. Thus, 4-methoxybenzyl (2RS)-2-hydroxy-2-[(3R)(4R)-3-phenylacetamido-4-[(RS)-2-tetrahydrofuryl]carbonylmethylthio]azetidin-2-on-1-ylacetate was converted to the chloride and then to the phosphonate which was cyclized with NaH in PhMe to give 50% I [R = (RS)-2-tetrahydrofuryl, R1 = H, R2 = PhCH2CO, R3 = 4-MeC6H4CH2].

IT **141061-21-4P**
RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)
(prepn. of cephems by cyclization of azetidinylphosphonoacetates with base)
RN 141061-21-4 HCAPLUS
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 8-oxo-7-[(phenylacetyl)amino]-3-(tetrahydro-2-furanyl)-, (4-methoxyphenyl)methyl ester, [6R-(6.alpha.,7.beta.)]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L6 ANSWER 3 OF 7 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1997:1373 HCAPLUS
DOCUMENT NUMBER: 126:89179
TITLE: Transformation of penicillins into 3-substituted .DELTA.3-cephems through addition/cyclization of allenecarboxylates
AUTHOR(S): Tanaka, Hideo; Sumida, Shin-ichi; Kameyama, Yutaka; Sorajo, Koichi; Wada, Isao; Torii, Sigeru
CORPORATE SOURCE: Faculty of Engineering, Okayama University, Okayama, 700, Japan
SOURCE: Bulletin of the Chemical Society of Japan (1996), 69(12), 3651-3658
CODEN: BCSJA8; ISSN: 0009-2673
PUBLISHER: Nippon Kagakkai
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 126:89179
GI



I

AB A straightforward synthesis of .DELTA.3-cephems I [R = morpholino,

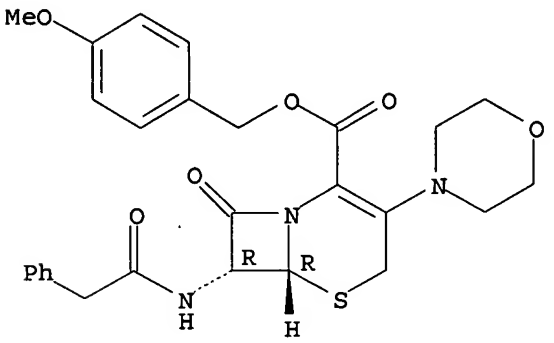
pyrrolidino, N3, 5-methyl-1,3,4-thiadiazolyl-2-thio, SO2Ph] was performed successfully by a sequential addn./cyclization reaction of the allenecarboxylate derived from penicillin. The addn./cyclization reaction proceeded smoothly upon treatment of the allenecarboxylate with the nucleophiles. Reaction of the allenecarboxylate with lithium chloride in NMP (N-methyl-2-pyrrolidone) in the presence of aluminum chloride afforded I [R = Cl], while without AlCl3 I [R = SO2Ph] was the main product. I [R = arylthio] were similarly prepd.

IT **139472-61-0P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(transformation of penicillins into 3-substituted .DELTA.3-cephems through addn./cyclization of allenecarboxylates)

RN 139472-61-0 HCAPLUS

CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 3-(4-morpholinyl)-8-oxo-7-[(phenylacetyl)amino]-, (4-methoxyphenyl)methyl ester, (6R-trans)- (9CI) (CA INDEX NAME)

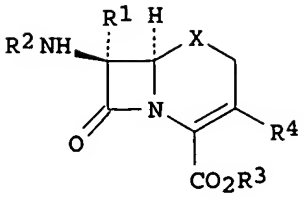
Absolute stereochemistry.



L6 ANSWER 4 OF 7 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1996:456093 HCAPLUS
DOCUMENT NUMBER: 125:114393
TITLE: Process for the preparation of cephalosporins and analogs
INVENTOR(S): Burton, George; Naylor, Antoinette
PATENT ASSIGNEE(S): Pfizer Inc., USA
SOURCE: PCT Int. Appl., 29 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9617847	A1	19960613	WO 1995-GB2783	19951129

W: JP, US
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE
PRIORITY APPLN. INFO.: GB 1994-24847 19941209
OTHER SOURCE(S): CASREACT 125:114393; MARPAT 125:114393
GI



I

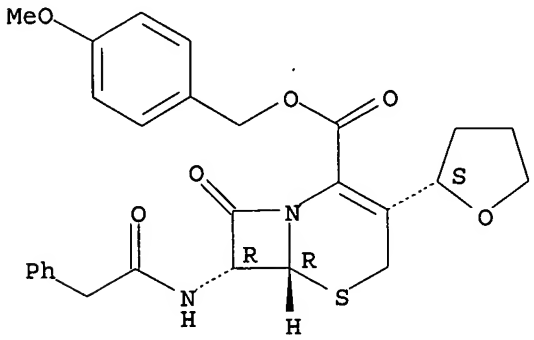
AB Cephalosporins I [X = S, SO, SO2, O, CH2; R1 = H, OMe, NHCHO; R2 = acyl; R3 = in vivo hydrolizable ester group; R4 = (un)substituted tetrahydrofuryl, tetrahydropyranyl] are prepd. by reaction of the corresponding carboxylic acid with R3Y [Y = halide] in the presence of an aq. phase contg. a base and a phase transfer catalyst. Subsequent removal of protecting groups, conversion of groups X and R2 and salt formation may be carried out. Thus, 4-methoxybenzyl (6R,7R)-7-phenylacetamido-3-[(S)-2-tetrahydrofuryl]cephem-4-carboxylate was treated with Me3CCO2CH2I, followed by deacylation and reacylation to give pivaloyloxymethyl (6R,7R)-7-[2-(2-amino-4-thiazolyl)-2-(Z)-methoxyiminoacetamido]-3-[(S)-2-tetrahydrofuryl]cephem-4-carboxylate.

IT **141194-63-0**
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. and transacylation of cephalosporin esters)

RN 141194-63-0 HCAPLUS

CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 8-oxo-7-[(phenylacetyl)amino]-3-(tetrahydro-2-furanyl)-, (4-methoxyphenyl)methyl ester, [6R-[3(S*),6.alpha.,7.beta.]]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



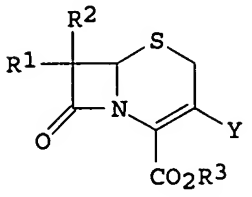
L6 ANSWER 5 OF 7 HCAPLUS COPYRIGHT 2002 ACS

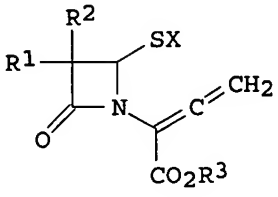
ACCESSION NUMBER:	1993:38686 HCAPLUS
DOCUMENT NUMBER:	118:38686
TITLE:	Process for preparing cephem derivatives
INVENTOR(S):	Torii, Sigeru; Tanaka, Hideo; Taniguchi, Masatoshi; Sasaoka, Michio; Shiroi, Takashi; Kameyama, Yutaka
PATENT ASSIGNEE(S):	Otsuka Kagaku K. K., Japan
SOURCE:	Eur. Pat. Appl., 13 pp. CODEN: EPXXDW
DOCUMENT TYPE:	Patent
LANGUAGE:	English
FAMILY ACC. NUM. COUNT:	1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 507124	A2	19921007	EP 1992-104202	19920311
EP 507124	A3	19921209		
EP 507124	B1	19961227		
R: DE, FR, GB, IT				
JP 04282387	A2	19921007	JP 1991-72450	19910311
JP 3195371	B2	20010806		
US 5204458	A	19930420	US 1992-849160	19920310

PRIORITY APPLN. INFO.: JP 1991-72450 A 19910311
OTHER SOURCE(S): CASREACT 118:38686; MARPAT 118:38686
GI


I


II

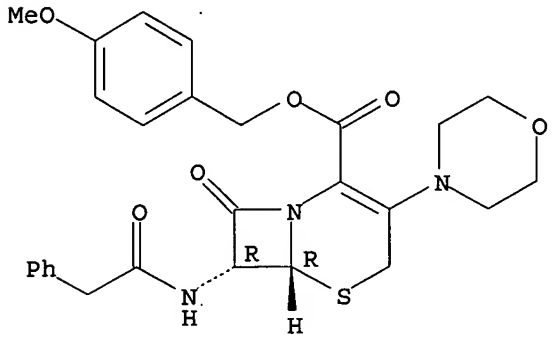
AB Title compds. [I; R1 = (protected) amino; R2 = H, alkoxy; R3 = H, carboxy-protective group; Y = residue of a nucleophile] were prepd. by cyclization of azetidinonylethenylideneacetates II [R1-R3 as above; X = SO2R4, SR4; R4 = aryl, (substituted) N-contg. heteroaryl] with a nucleophile. Thus, II [R1 = PhCH2CONH, R2 = H, R3 = CH2C6H4(OMe)-4, X = SO2Ph] was stirred 1 h with morpholine in DMF contg. CaCl2 to give 87% I (R1-R3 unchanged, Y = morpholino).

IT **139472-61-0P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of, method for)

RN 139472-61-0 HCAPLUS

CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 3-(4-morpholinyl)-8-oxo-7-[(phenylacetyl)amino]-, (4-methoxyphenyl)methyl ester, (6R-trans)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L6 ANSWER 6 OF 7 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1992:255397 HCAPLUS

DOCUMENT NUMBER: 116:255397
TITLE: Preparation of 3-tetrahydrofurylcephem-3-carboxylates and analogs as antibiotics
INVENTOR(S): Bateson, John Hargreaves; Burton, George; Fell, Stephen Christopher Martin
PATENT ASSIGNEE(S): Beecham Group PLC, UK
SOURCE: PCT Int. Appl., 147 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9201696	A1	19920206	WO 1991-GB1228	19910722
W: AU, CA, CS, FI, HU, JP, KR, NO, PL, US				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, NL, SE				
CA 2087967	AA	19920125	CA 1991-2087967	19910722
AU 9182224	A1	19920218	AU 1991-82224	19910722
AU 648329	B2	19940421		
ZA 9105725	A	19920624	ZA 1991-5725	19910722
EP 540609	A1	19930512	EP 1991-913583	19910722
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE				
HU 63628	A2	19930928	HU 1993-177	19910722
JP 05509305	T2	19931222	JP 1991-512368	19910722
JP 2851428	B2	19990127		
AT 185567	E	19991015	AT 1991-913583	19910722
ES 2137162	T3	19991216	ES 1991-913583	19910722
CN 1060469	A	19920422	CN 1991-105783	19910724
CN 1061046	B	20010124		
NO 9300226	A	19930323	NO 1993-226	19930122
US 6020329	A	20000201	US 1997-958864	19971020
CN 1223859	A	19990728	CN 1998-122407	19981114
US 6001997	A	19991214	US 1999-228138	19990111
US 6077952	A	20000620	US 1999-327667	19990608

PRIORITY APPLN. INFO.:

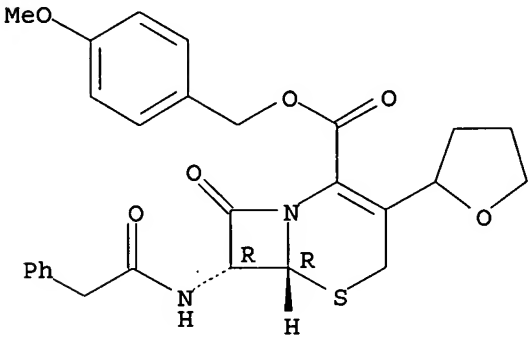
GB 1990-16189	A	19900724
GB 1991-9540	A	19910502
WO 1991-GB1228	A	19910722
US 1993-934667	B1	19930122
US 1995-470786	B1	19950606
US 1997-958864	A1	19971020
US 1999-228138	A1	19990111

OTHER SOURCE(S): MARPAT 116:255397
GI For diagram(s), see printed CA Issue.
AB Title compds. (I; R1 = H, MeO, HCONH; R2 = acyl; R3 = H, neg. charge, carboxy-protective group; R4 = .ltoreq.4 substituents selected from alkyl, alkenyl, OH, halo, alkoxy, etc.; X = O, CH2, SOn; n= 0-2; m = 1, 2) were prepd. Thus, Na 2-(2-tritylaminothiazol-4-yl)-2-(Z)-trityloxyiminoacetate was condensed with tert-butyl (6R, 7R)-7-amino-3-[(R)-tetrahydrofuran-2-yl]ceph-3-em-4-carboxylate to give, after deprotection, (6R, 7R)-7-[2-(2-aminothiazol-4-yl)-2-(Z)-hydroxyiminoacetamido]-3-[(RS)-tetrahydrofuran-2-yl]ceph-3-em-4-carboxylic acid which had MIC of 0.50 and 0.25 .mu.g/mL against Escherichia coli (NCTC 1048) and Staphylococcus aureus (Oxford), resp.
IT **141061-21-4P 141061-24-7P 141061-25-8P**
141072-52-8P 141072-54-0P 141072-55-1P
141072-56-2P 141072-58-4P 141072-59-5P
141072-60-8P 141072-67-5P 141072-71-1P
141072-73-3P 141072-74-4P 141072-78-8P

141072-80-2P 141072-85-7P 141072-86-8P
141072-87-9P 141072-94-8P 141072-95-9P
141073-02-1P 141073-04-3P 141073-15-6P
141194-60-7P 141194-63-0P 141194-67-4P
141194-73-2P 141194-77-6P 141194-83-4P
141194-85-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and reaction of, in prepn. of antibiotics)

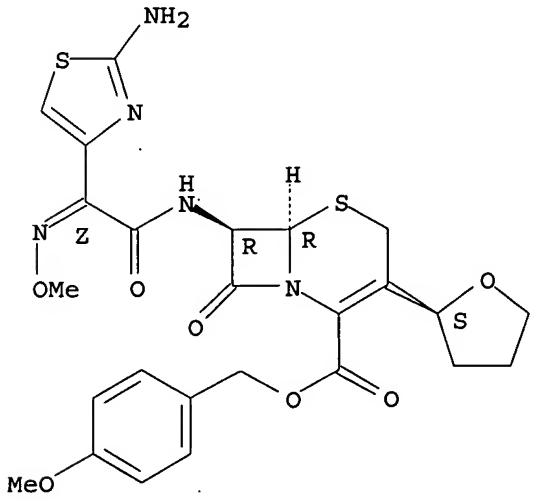
RN 141061-21-4 HCAPLUS
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 8-oxo-7-[(phenylacetyl)amino]-3-(tetrahydro-2-furanyl)-, (4-methoxyphenyl)methyl ester, [6R-(6.alpha.,7.beta.)]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 141061-24-7 HCAPLUS
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-[[(2-amino-4-thiazolyl)(methoxyimino)acetyl]amino]-8-oxo-3-(tetrahydro-2-furanyl)-, (4-methoxyphenyl)methyl ester, [6R-[3(S*),6.alpha.,7.beta.(Z)]]- (9CI) (CA INDEX NAME)

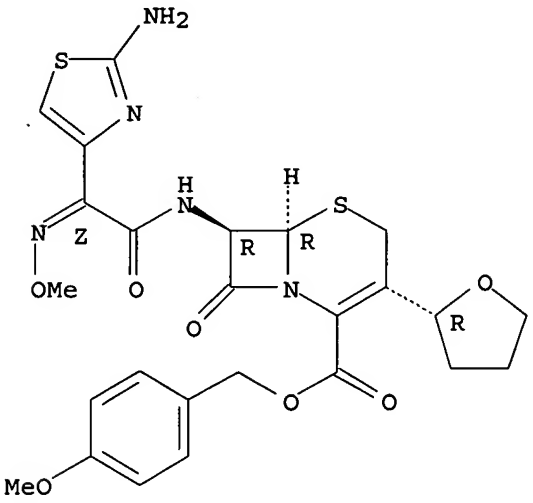
Absolute stereochemistry.
Double bond geometry as shown.



RN 141061-25-8 HCAPLUS

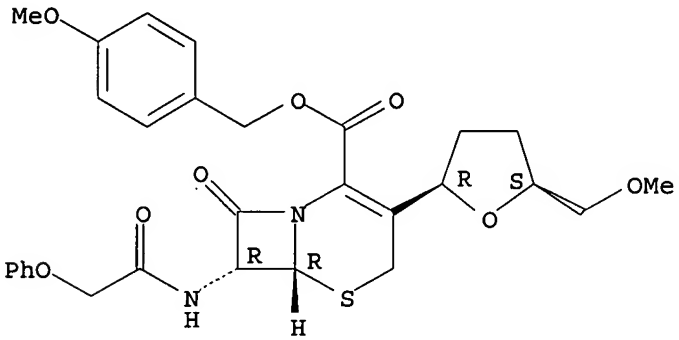
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-[[(2-amino-4-thiazolyl)(methoxyimino)acetyl]amino]-8-oxo-3-(tetrahydro-2-furanyl)-, (4-methoxyphenyl)methyl ester, [6R-[3(R*),6.alpha.,7.beta.(Z)]]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.



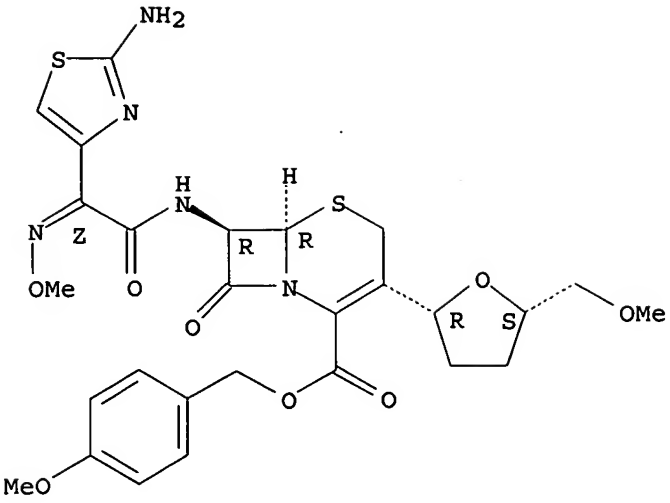
RN 141072-52-8 HCAPLUS
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 8-oxo-7-[(phenoxyacetyl)amino]-3-[tetrahydro-5-(methoxymethyl)-2-furanyl]-, (4-methoxyphenyl)methyl ester, [6R-[3(2R*,5S*),6.alpha.,7.beta.]]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



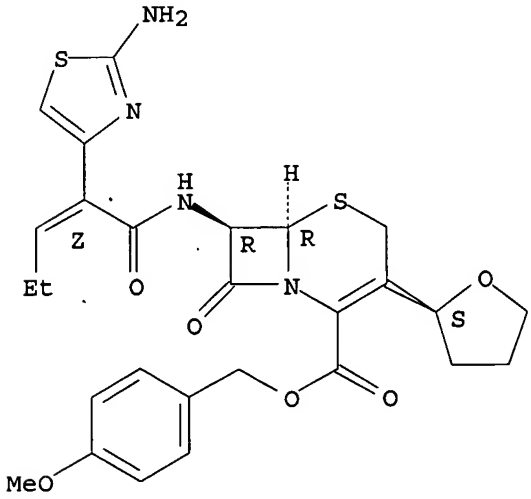
RN 141072-54-0 HCAPLUS
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-[[(2-amino-4-thiazolyl)(methoxyimino)acetyl]amino]-8-oxo-3-[tetrahydro-5-(methoxymethyl)-2-furanyl]-, (4-methoxyphenyl)methyl ester, [6R-[3(2R*,5S*),6.alpha.,7.beta.(Z)]]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.



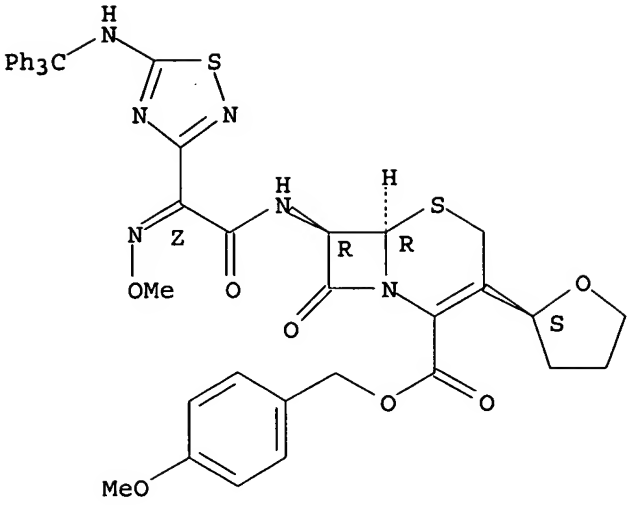
RN 141072-55-1 HCAPLUS
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-[[2-(2-amino-4-thiazolyl)-1-oxo-2-pentenyl]amino]-8-oxo-3-(tetrahydro-2-furanyl)-, (4-methoxyphenyl)methyl ester, [6R-[3(S*),6.alpha.,7.beta.(Z)]]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.



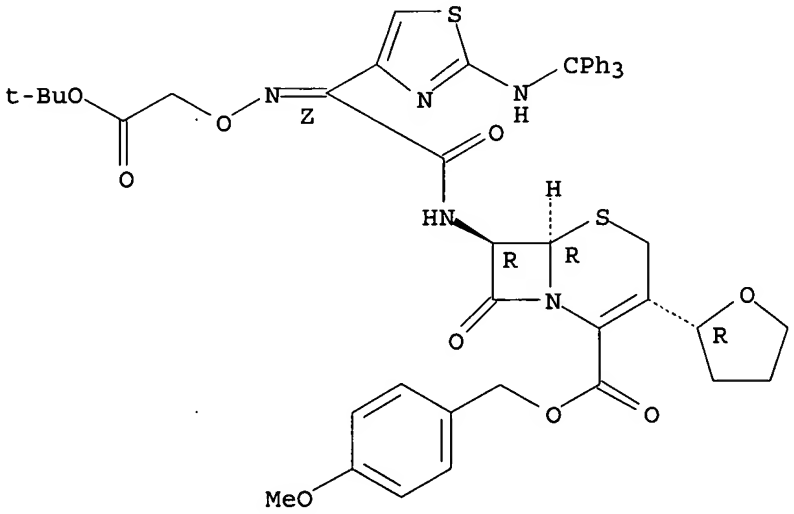
RN 141072-56-2 HCAPLUS
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-[[(methoxyimino)[5-[(triphenylmethyl)amino]-1,2,4-thiadiazol-3-yl]acetyl]amino]-8-oxo-3-(tetrahydro-2-furanyl)-, (4-methoxyphenyl)methyl ester, [6R-[3(S*),6.alpha.,7.beta.(Z)]]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.



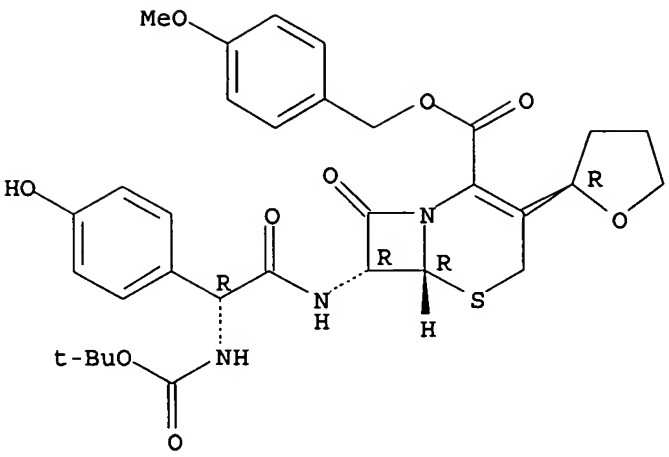
RN 141072-58-4 HCAPLUS
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-[[[[2-(1,1-dimethylethoxy)-2-oxoethoxy]imino][2-[(triphenylmethyl)amino]-4-thiazolyl]acetyl]amino]-8-oxo-3-(tetrahydro-2-furanyl)-, (4-methoxyphenyl)methyl ester, [6R-[3(R*),6.alpha.,7.beta.(Z)]]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.



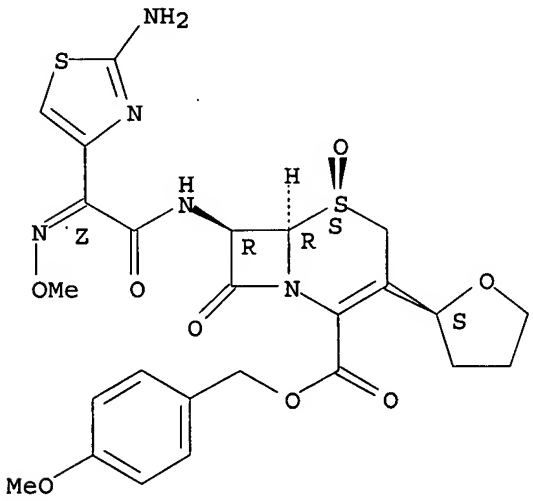
RN 141072-59-5 HCAPLUS
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-[[[[(1,1-dimethylethoxy)carbonyl]amino](4-hydroxyphenyl)acetyl]amino]-8-oxo-3-(tetrahydro-2-furanyl)-, (4-methoxyphenyl)methyl ester, [6R-[3(R*),6.alpha.,7.beta.(R*)]]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



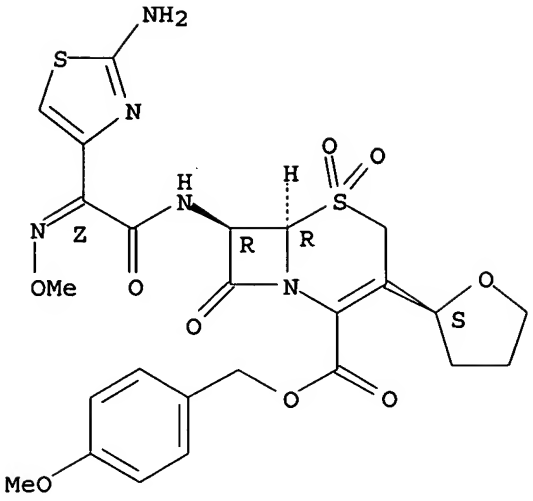
RN 141072-60-8 HCAPLUS
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-[[(2-amino-4-thiazolyl)(methoxyimino)acetyl]amino]-8-oxo-3-(tetrahydro-2-furanyl)-, (4-methoxyphenyl)methyl ester, 5-oxide, [5S-[3(R*),5.alpha.,6.beta.,7.alpha.(Z)]]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.



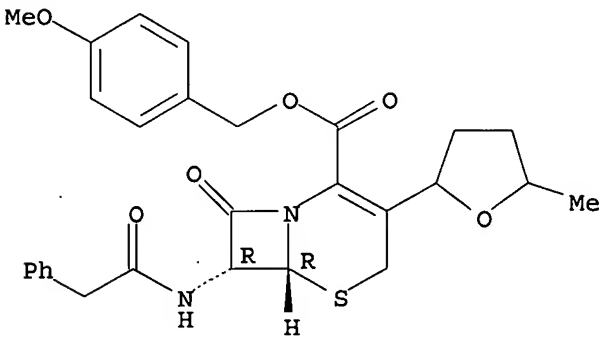
RN 141072-67-5 HCAPLUS
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-[[(2-amino-4-thiazolyl)(methoxyimino)acetyl]amino]-8-oxo-3-(tetrahydro-2-furanyl)-, (4-methoxyphenyl)methyl ester, 5,5-dioxide, [6R-[3(S*),6.alpha.,7.beta.(Z)]]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.



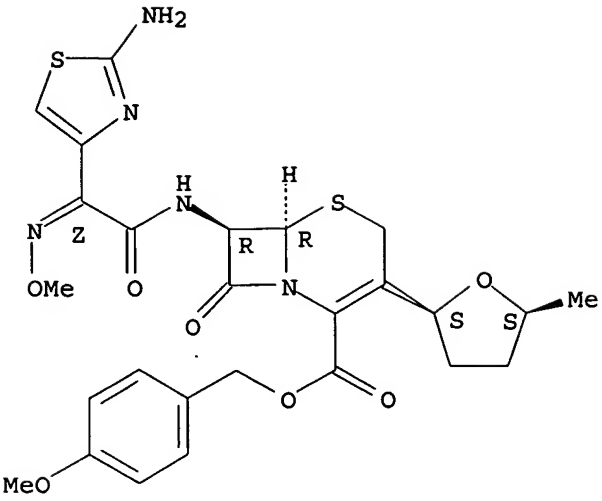
RN 141072-71-1 HCAPLUS
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 8-oxo-7-[(phenylacetyl)amino]-3-(tetrahydro-5-methyl-2-furanyl)-, (4-methoxyphenyl)methyl ester, [6R-(6.alpha.,7.beta.)]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



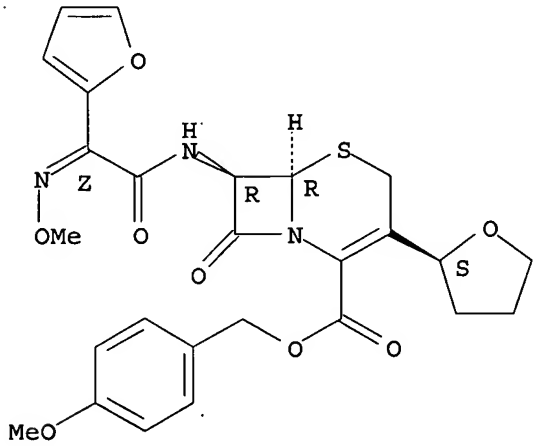
RN 141072-73-3 HCAPLUS
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-[[(2-amino-4-thiazolyl)(methoxyimino)acetyl]amino]-8-oxo-3-(tetrahydro-5-methyl-2-furanyl)-, (4-methoxyphenyl)methyl ester, [6R-[3(2S*,5S*),6.alpha.,7.beta.(Z)]]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.



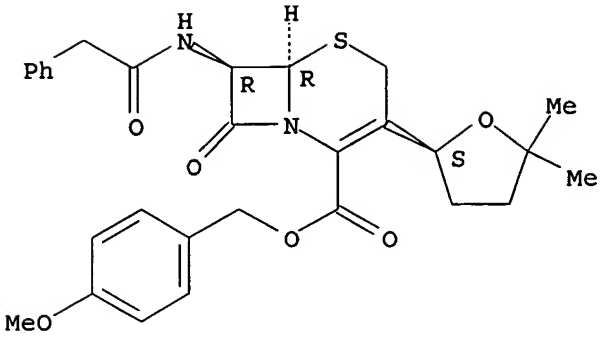
RN 141072-74-4 HCAPLUS
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-[[2-furanyl(methoxyimino)acetyl]amino]-8-oxo-3-(tetrahydro-2-furanyl)-, (4-methoxyphenyl)methyl ester, [6R-[3(S*),6.alpha.,7.beta.(Z)]]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.



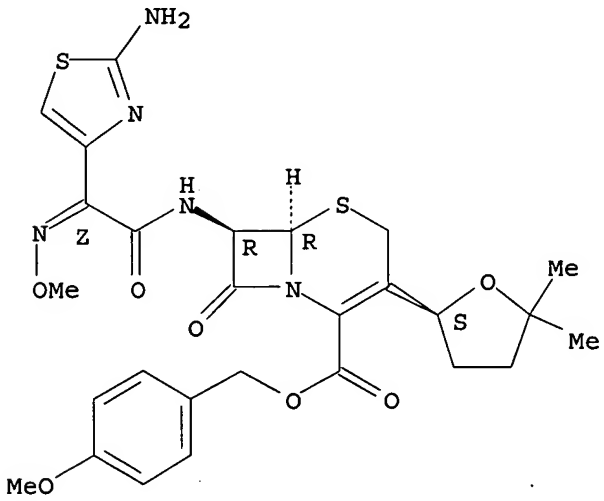
RN 141072-78-8 HCAPLUS
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 8-oxo-7-[(phenylacetyl)amino]-3-(tetrahydro-5,5-dimethyl-2-furanyl)-, (4-methoxyphenyl)methyl ester, [6R-[3(S*),6.alpha.,7.beta.]]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



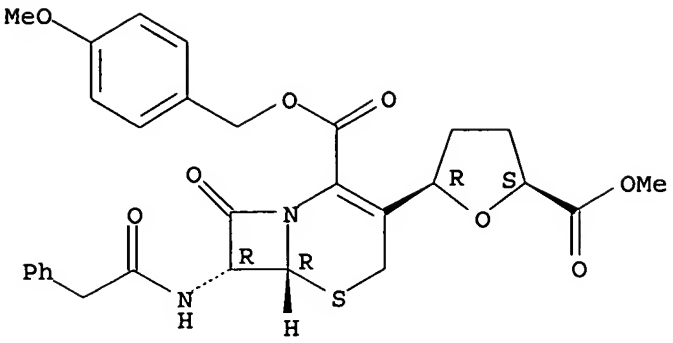
RN 141072-80-2 HCAPLUS
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-[[(2-amino-4-thiazolyl)(methoxyimino)acetyl]amino]-8-oxo-3-(tetrahydro-5,5-dimethyl-2-furanyl)-, (4-methoxyphenyl)methyl ester, [6R-[3(S*),6.alpha.,7.beta.(Z)]]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.



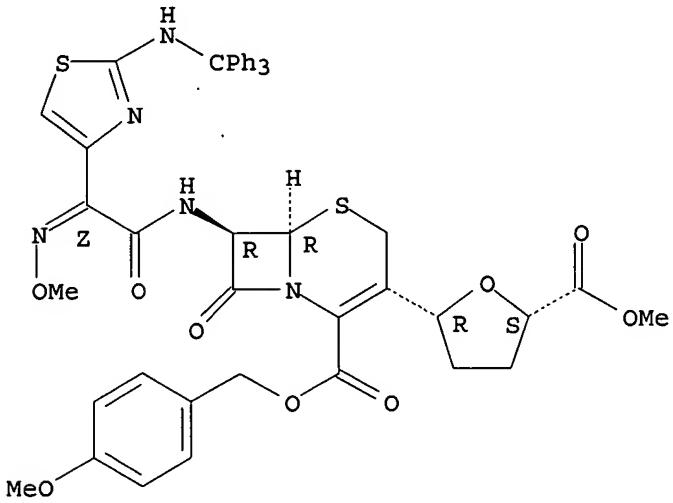
RN 141072-85-7 HCAPLUS
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 8-oxo-7-[(phenylacetyl)amino]-3-[tetrahydro-5-(methoxycarbonyl)-2-furanyl]-, (4-methoxyphenyl)methyl ester, [6R-[3(2R*,5S*),6.alpha.,7.beta.]]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



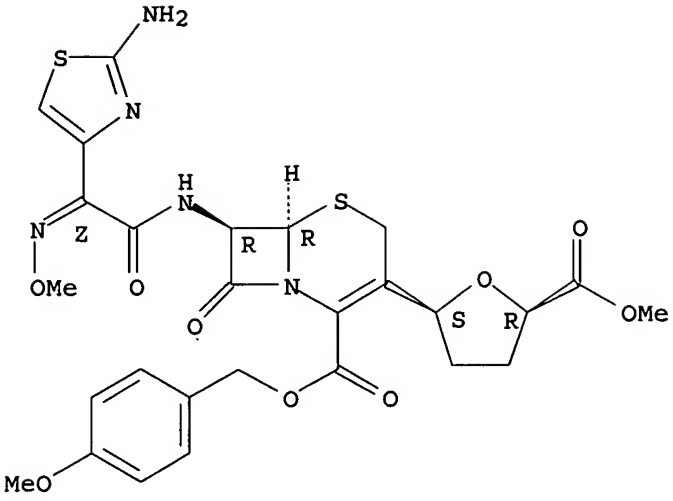
RN 141072-86-8 HCAPLUS
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-[[(methoxyimino)[2-[(triphenylmethyl)amino]-4-thiazolyl]acetyl]amino]-8-oxo-3-[tetrahydro-5-(methoxycarbonyl)-2-furanyl]-, (4-methoxyphenyl)methyl ester, [6R-[3(2R*,5S*),6.alpha.,7.beta.(Z)]]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.



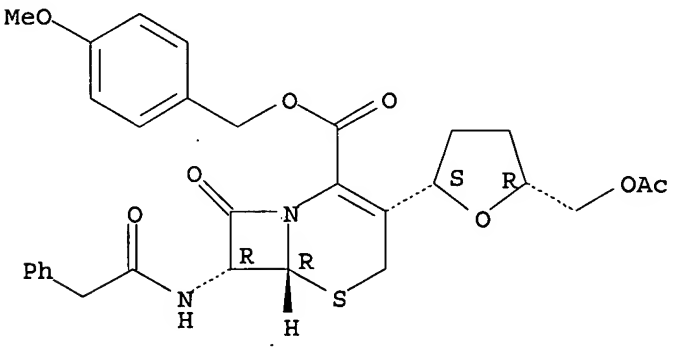
RN 141072-87-9 HCAPLUS
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-[[(2-amino-4-thiazolyl)(methoxyimino)acetyl]amino]-8-oxo-3-[tetrahydro-5-(methoxycarbonyl)-2-furanyl]-, (4-methoxyphenyl)methyl ester, [6R-[3(2S*,5R*),6.alpha.,7.beta.(Z)]]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.



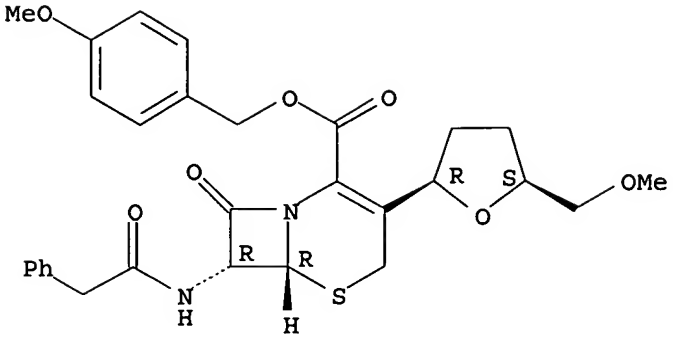
RN 141072-94-8 HCAPLUS
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 3-[5-[(acetyloxy)methyl]tetrahydro-2-furanyl]-8-oxo-7-[(phenylacetyl)amino]-, (4-methoxyphenyl)methyl ester, [6R-[3(2S*,5R*),6.alpha.,7.beta.]]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



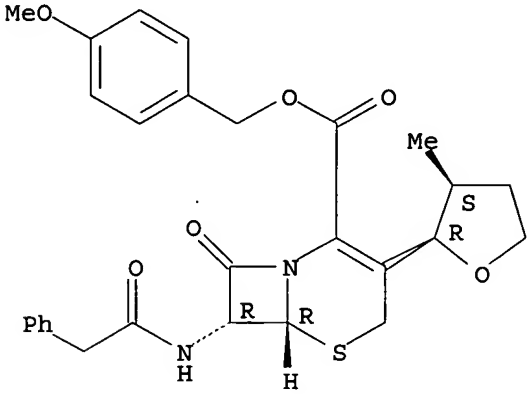
RN 141072-95-9 HCAPLUS
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 8-oxo-7-[(phenylacetyl)amino]-3-[tetrahydro-5-(methoxymethyl)-2-furanyl]-, (4-methoxyphenyl)methyl ester, [6R-[3(2R*,5S*),6.alpha.,7.beta.]]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



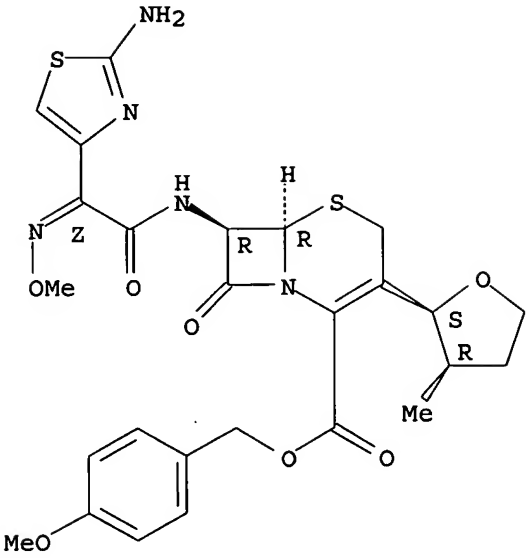
RN 141073-02-1 HCAPLUS
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 8-oxo-7-[(phenylacetyl)amino]-3-(tetrahydro-3-methyl-2-furanyl)-, (4-methoxyphenyl)methyl ester, [6R-[3(2R*,3S*),6.alpha.,7.beta.]]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



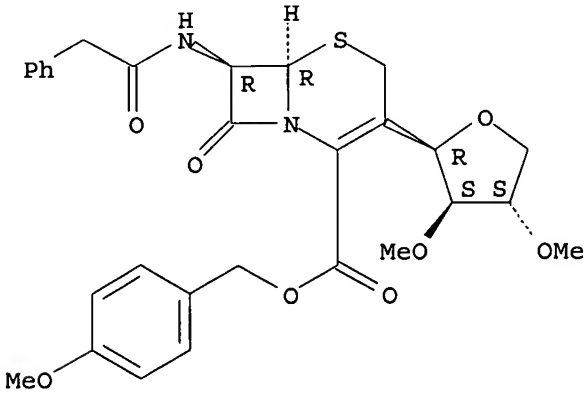
RN 141073-04-3 HCAPLUS
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-[[(2-amino-4-thiazolyl)(methoxyimino)acetyl]amino]-8-oxo-3-(tetrahydro-3-methyl-2-furanyl)-, (4-methoxyphenyl)methyl ester, [6R-[3(2S*,3R*),6.alpha.,7.beta.(Z)]]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.



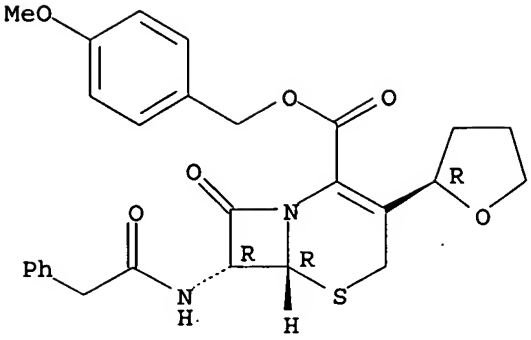
RN 141073-15-6 HCAPLUS
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 8-oxo-7-[(phenylacetyl)amino]-3-(tetrahydro-3,4-dimethoxy-2-furanyl)-, (4-methoxyphenyl)methyl ester, [2R-[2.alpha.(6R*,7R*),3.alpha.,4.beta.]]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



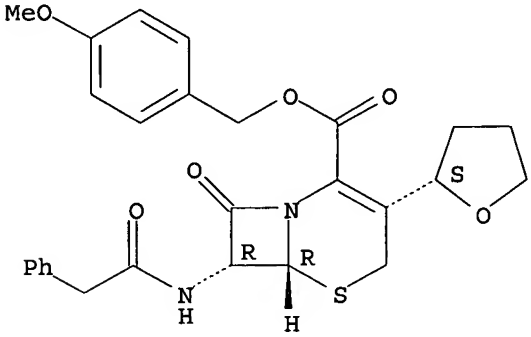
RN 141194-60-7 HCAPLUS
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 8-oxo-7-[(phenylacetyl)amino]-3-[(2R)-tetrahydro-2-furanyl]-, (4-methoxyphenyl)methyl ester, (6R,7R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



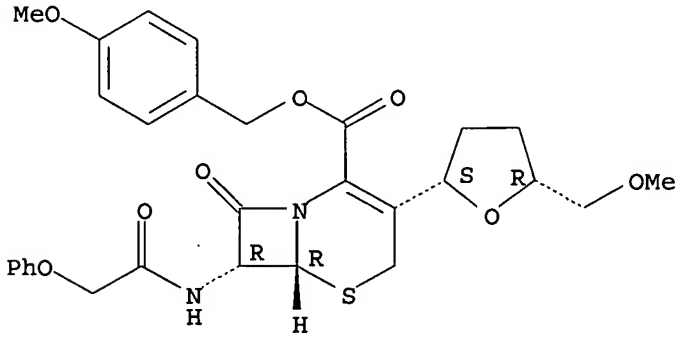
RN 141194-63-0 HCAPLUS
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 8-oxo-7-[(phenylacetyl)amino]-3-(tetrahydro-2-furanyl)-, (4-methoxyphenyl)methyl ester, [6R-[3(S*),6.alpha.,7.beta.]]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 141194-67-4 HCAPLUS
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 8-oxo-7-[(phenoxyacetyl)amino]-3-[tetrahydro-5-(methoxymethyl)-2-furanyl]-, (4-methoxyphenyl)methyl ester, [6R-[3(2S*,5R*),6.alpha.,7.beta.]]- (9CI) (CA INDEX NAME)

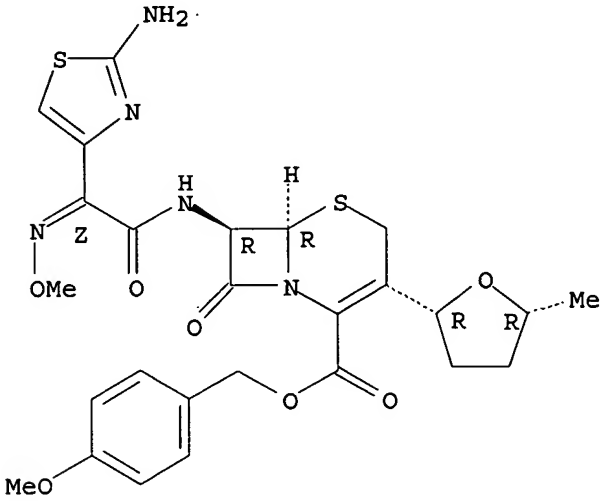
Absolute stereochemistry.



RN 141194-73-2 HCAPLUS

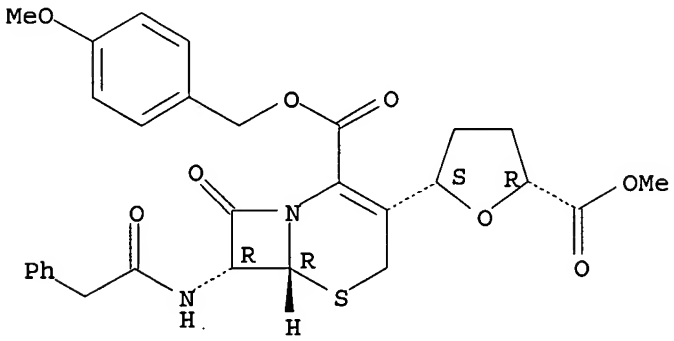
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-[[(2-amino-4-thiazolyl)(methoxyimino)acetyl]amino]-8-oxo-3-(tetrahydro-5-methyl-2-furanyl)-, (4-methoxyphenyl)methyl ester, [6R-[3(2R*,5R*),6.alpha.,7.beta.(Z)]]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.



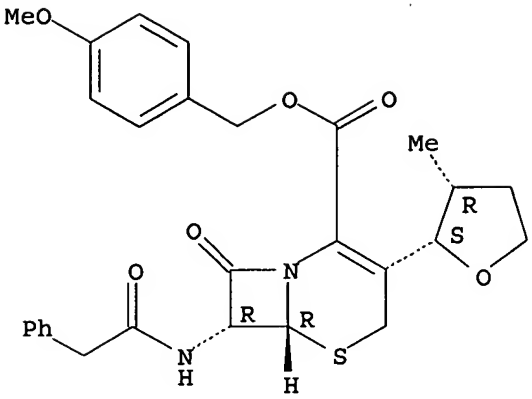
RN 141194-77-6 HCAPLUS
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 8-oxo-7-[(phenylacetyl)amino]-3-[tetrahydro-5-(methoxycarbonyl)-2-furanyl]-, (4-methoxyphenyl)methyl ester, [6R-[3(2S*,5R*),6.alpha.,7.beta.]]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



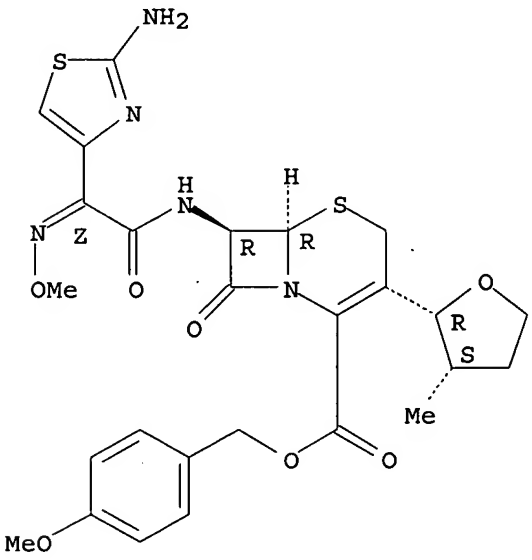
RN 141194-83-4 HCAPLUS
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 8-oxo-7-[(phenylacetyl)amino]-3-(tetrahydro-3-methyl-2-furanyl)-, (4-methoxyphenyl)methyl ester, [6R-[3(2S*,3R*),6.alpha.,7.beta.]]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



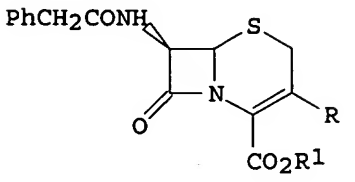
RN 141194-85-6 HCAPLUS
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-[[(2-amino-4-thiazolyl)(methoxyimino)acetyl]amino]-8-oxo-3-(tetrahydro-3-methyl-2-furanyl)-, (4-methoxyphenyl)methyl ester, [6R-[3(2R*,3S*),6.alpha.,7.beta.(Z)]]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.



L6 ANSWER 7 OF 7 HCAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1992:128438 HCAPLUS
DOCUMENT NUMBER: 116:128438
TITLE: Penicillin-cephalosporin conversion. XV. A new short-cut route to 3-norcephalosporins
AUTHOR(S): Tanaka, Hideo; Kameyama, Yutaka; Sumida, Shinichi; Yamada, Takae; Tokumaru, Yoshihisa; Shiro, Takashi; Sasaoka, Michio; Taniguchi, Mastoshi; Torii, Sigeru
CORPORATE SOURCE: Fac. Eng., Okayama Univ., Okayama, 700, Japan
SOURCE: Synlett (1991), (12), 888-90
CODEN: SYNLES; ISSN: 0936-5214

DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 116:128438
GI



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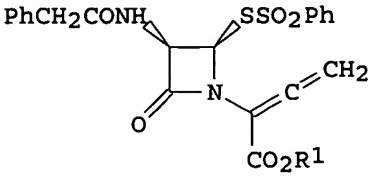


II

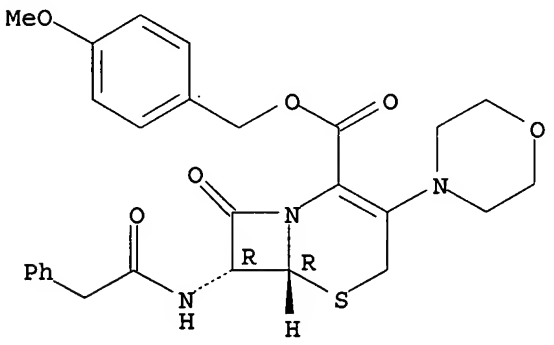
AB 3-Norcephems I (R = heterocyclic amino, SO2Ph, Cl; R1 = CH2C6H4OMe-4, CHPh2) were prepd. starting from penicillin G through a new shortcut involving Michael addn. of amines, azide or thiols to allenic esters II and sequential ring closure to the six-membered ring.

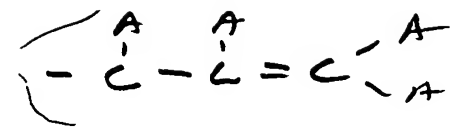
IT **139472-61-0P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of)

RN 139472-61-0 HCAPLUS

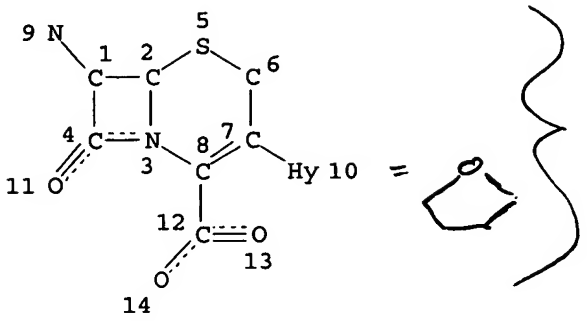
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 3-(4-morpholinyl)-8-oxo-7-[(phenylacetyl)amino]-, (4-methoxyphenyl)methyl ester, (6R-trans)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



Search 2 – part B R_3 = 

=> d que l8
L1 STR

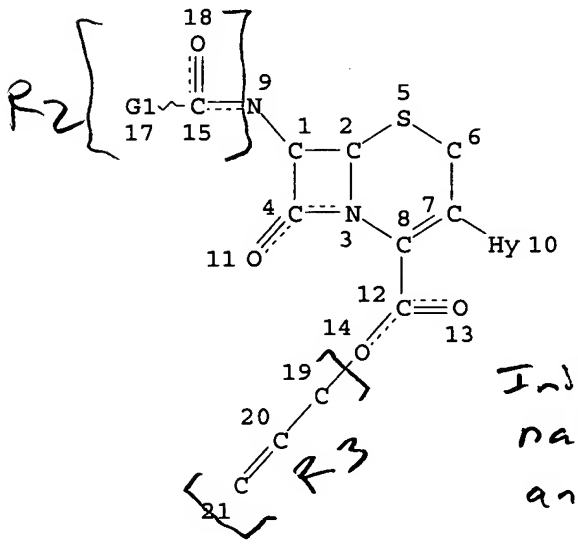


Same initial search as in previous searches

NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
GGCAT IS MCY SAT AT 10
DEFAULT ECLEVEL IS LIMITED
ECOUNT IS E4 C E1 O AT 10

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 14

STEREO ATTRIBUTES: NONE
L2 148 SEA FILE=REGISTRY SSS FUL L1
L5 STR



Initially I defined R_3 more narrowly – but I didn't get any hits.

VAR G1=H/C/N/O
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
GGCAT IS MCY SAT AT 10
DEFAULT ECLEVEL IS LIMITED
ECOUNT IS E4 C E1 O AT 10

GRAPH ATTRIBUTES:
RSPEC I
NUMBER OF NODES IS 20

search L2 using structure L5.

search CAPLUS with answer set from Registry

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STEREO ATTRIBUTES: NONE
L7             4 SEA FILE=REGISTRY SUB=L2 SSS FUL L5
L8             4 SEA FILE=CAPLUS ABB=ON  PLU=ON  L7


=> D IBIB ABS HITSTR 1-4

L8   ANSWER 1 OF 4  CAPLUS  COPYRIGHT 2002 ACS
ACCESSION NUMBER:         2002:449689  CAPLUS
DOCUMENT NUMBER:          137:33162
TITLE:                    Process for the preparation of p-nitrobenzyl or allyl
                          esters of 3-cyclic-ether substituted cephalosporins
                          from trimethylphosphinic compounds via an
                          intramolecular Wittig reaction
INVENTOR(S):              Colberg, Juan Carlos; Tucker, John Lloyd; Zenoni,
                          Maurizio; Fogliato, Giovanni; Donadelli, Alessandro
PATENT ASSIGNEE(S):       Pfizer Products Inc., USA
SOURCE:                   PCT Int. Appl., 47 pp.
                          CODEN: PIXXD2
DOCUMENT TYPE:            Patent
LANGUAGE:                 English
FAMILY ACC. NUM. COUNT:   1
PATENT INFORMATION:

     PATENT NO.        KIND  DATE           APPLICATION NO.  DATE
     ---------------   ----  --------       ---------------  --------
     WO 2002046199      A1   20020613       WO 2001-IB2181   20011119
         W:  AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
             CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
             GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
             LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH,
             PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA,
             UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
         RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH,
             CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR,
             BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
     US 2002099205      A1   20020725       US 2001-6579     20011204
PRIORITY APPLN. INFO.:                     US 2000-251018P  P  20001204
OTHER SOURCE(S):          CASREACT 137:33162; MARPAT 137:33162
GI
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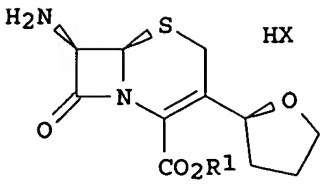
Applicants' work.



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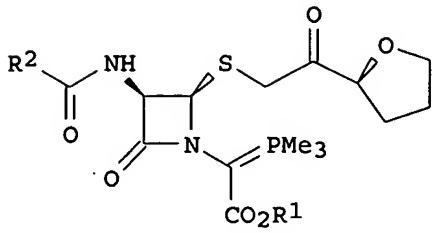
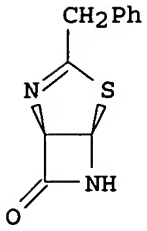


II



III

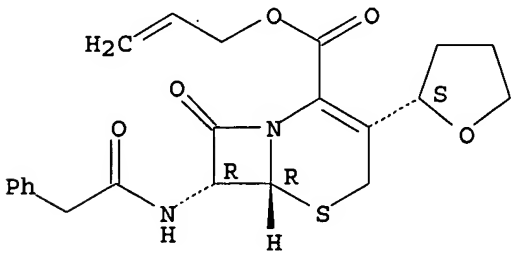
AB A process for the prepn. of I (R1 = p-nitrobenzyl, allyl; X = halo) via an intramol. Wittig reaction of II (R1 = p-nitrobenzyl, allyl; R2 = C1-6-alkyl, C6-10-aryl, C6-10-aryl-C1-6-alkyl, dithianyl) to prep. 3-cyclic-ether substituted derivs. of cephalosporins is described. Thus, III was treated with p-nitrobenzyl glyoxylate monohydrate followed by redn. of the intermediate with NaBH4. The resulting hydroxy compd. was treated with p-toluenesulfonic acid followed by addn. of (S)-1-(tetrahydro-2-furanyl)ethanone, addn. of thionyl chloride, and finally trimethylphosphine to give the desired intermediate II (R1 = p-nitrobenzyl, R2 = PhCH2). Cyclization of II via an intramol. Wittig reaction was accomplished by refluxing for 16 h in THF. Addn. of phosphorus pentachloride and .alpha.-picoline in dichloromethane gave the free amine of I (R1 = p-nitrobenzyl).

IT **436100-76-4P**
RL: IMF (Industrial manufacture); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(process for the prepn. of p-nitrobenzyl or allyl esters of 3-cyclic-ether substituted cephalosporins from trimethylphosphinic compds. via an intramol. Wittig reaction)

RN 436100-76-4 CAPLUS

CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 8-oxo-7-[(phenylacetyl)amino]-3-[(2S)-tetrahydro-2-furanyl]-, 2-propenyl ester, (6R,7R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS

RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 2 OF 4 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2002:449688 CAPLUS
DOCUMENT NUMBER: 137:33161
TITLE: Coupling process and intermediates useful for preparing cephalosphorins
INVENTOR(S): Colberg, Juan Carlos; Donadelli, Alessandro; Fogliato, Giovanni; Zenoni, Maurizio
PATENT ASSIGNEE(S): Pfizer Products Inc., USA
SOURCE: PCT Int. Appl., 33 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002046198	A1	20020613	WO 2001-IB2225	20011122

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 2000-251014P P 20001204
OTHER SOURCE(S): MARPAT 137:33161
GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB This invention relates to a novel process for the prepn. of 3-cyclic-ether-substituted cephalosporins, such as I [CO2R1 =carboxylic acid or a carboxylate salt; A1 = aryl, heteroaryl, heterocyclyl; A2 = H, alkyl, cycloalkyl, aryl, etc.], via amidation reactions. Thus, cephalosporin II was prepd. in 80% yield by amidation of amine III with the acid anhydride of acid IV using O,O-di-Et hydrogenphosphorothioate in a Me2CO/H2O soln.

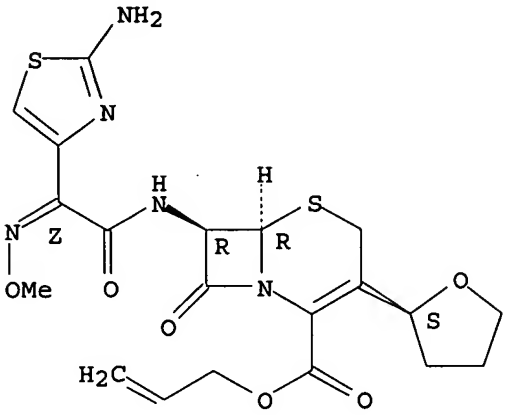
IT **436100-70-8P 436100-76-4P**
RL: IMF (Industrial manufacture); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(process for the prepn. of intermediates via amidation which are useful for prepg. cephalosphorins)

RN 436100-70-8 CAPLUS
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-[[(2Z)-(2-amino-4-thiazolyl)(methoxyimino)acetyl]amino]-8-oxo-3-[(2S)-tetrahydro-2-furanyl]-, 2-propenyl ester, (6R,7R)-, monobenzenesulfinate (9CI) (CA INDEX NAME)

CM 1

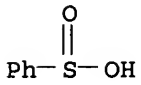
CRN 436100-69-5
CMF C20 H23 N5 O6 S2

Absolute stereochemistry.
Double bond geometry as shown.



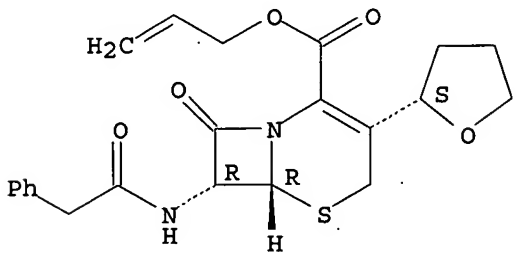
CM 2

CRN 618-41-7
CMF C6 H6 O2 S



RN 436100-76-4 CAPLUS
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 8-oxo-7-[(phenylacetyl)amino]-3-[(2S)-tetrahydro-2-furanyl]-, 2-propenyl ester, (6R,7R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



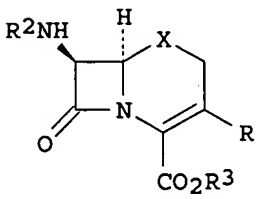
REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1997:140924 CAPLUS
DOCUMENT NUMBER: 126:144046
TITLE: Beta-lactam preparation
INVENTOR(S): Harris, Michael Anthony; Saunders, Richard Neville
PATENT ASSIGNEE(S): Pfizer Limited, UK

SOURCE: Brit. UK Pat. Appl., 15 pp.
CODEN: BAXXDU
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 2300856	A1	19961120	GB 1995-10126	19950516

OTHER SOURCE(S): CASREACT 126:144046; MARPAT 126:144046
GI



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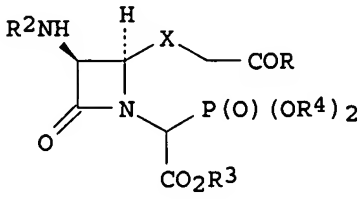


II

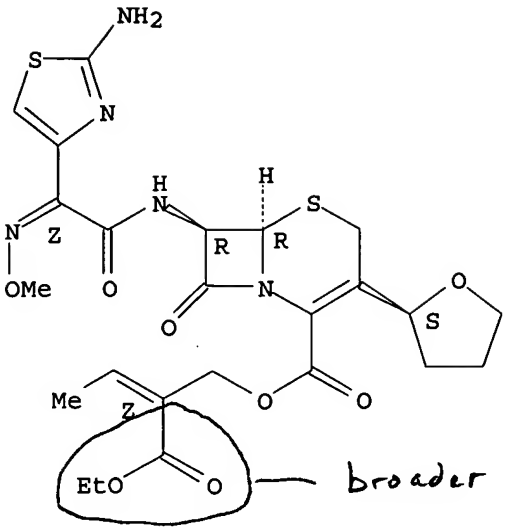
AB Title compds. I [R = substituent; R1 = H, OMe, NHCHO; R2 = acyl; CO2R3 = CO2H, CO2-; R3 = protecting group; X = S, SO, SO2, O, CH2] are prepd. by base-induced cyclization of an azetidinone II [R4 = alkyl, aryl]. II are prepd. from the halide and P(OR4)3. Thus, 4-methoxybenzyl (2RS)-2-hydroxy-2-[(3R)(4R)-3-phenylacetamido-4-[(RS)-2-tetrahydrofuryl]carbonylmethylthio]azetidin-2-on-1-ylacetate was converted to the chloride and then to the phosphonate which was cyclized with NaH in PhMe to give 50% I [R = (RS)-2-tetrahydrofuryl, R1 = H, R2 = PhCH2CO, R3 = 4-MeC6H4CH2].

IT **141060-97-1P**
RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)
(prepn. of cephems by cyclization of azetidinylphosphonoacetates with base)

RN 141060-97-1 CAPLUS

CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-[[(2-amino-4-thiazolyl)(methoxyimino)acetyl]amino]-8-oxo-3-(tetrahydro-2-furanyl)-, 2-(ethoxycarbonyl)-2-butenyl ester, [6R-[2(Z),3(S*),6.alpha.,7.beta.(Z)]]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.



broader than your defn for R_3.

L8 ANSWER 4 OF 4 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1992:255397 CAPLUS
DOCUMENT NUMBER: 116:255397
TITLE: Preparation of 3-tetrahydrofurylcephem-3-carboxylates and analogs as antibiotics
INVENTOR(S): Bateson, John Hargreaves; Burton, George; Fell, Stephen Christopher Martin
PATENT ASSIGNEE(S): Beecham Group PLC, UK
SOURCE: PCT Int. Appl., 147 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9201696	A1	19920206	WO 1991-GB1228	19910722
W: AU, CA, CS, FI, HU, JP, KR, NO, PL, US				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, NL, SE				
CA 2087967	AA	19920125	CA 1991-2087967	19910722
AU 9182224	A1	19920218	AU 1991-82224	19910722
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ZA 9105725	A	19920624	ZA 1991-5725	19910722
EP 540609	A1	19930512	EP 1991-913583	19910722
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE				
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PRIORITY APPLN. INFO.:

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OTHER SOURCE(S): MARPAT 116:255397

GI For diagram(s), see printed CA Issue.

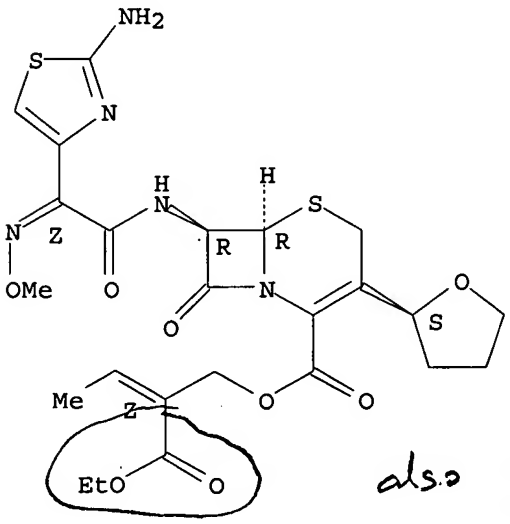
AB Title compds. (I; R1 = H, MeO, HCONH; R2 = acyl; R3 = H, neg. charge, carboxy-protective group; R4 = .ltoreq.4 substituents selected from alkyl, alkenyl, OH, halo, alkoxy, etc.; X = O, CH2, SOn; n= 0-2; m = 1, 2) were prepd. Thus, Na 2-(2-tritylaminothiazol-4-yl)-2-(Z)-trityloxyiminoacetate was condensed with tert-butyl (6R, 7R)-7-amino-3-[(R)-tetrahydrofuran-2-yl]ceph-3-em-4-carboxylate to give, after deprotection, (6R, 7R)-7-[2-(2-aminothiazol-4-yl)-2-(Z)-hydroxyiminoacetamido]-3-[(RS)-tetrahydrofuran-2-yl]ceph-3-em-4-carboxylic acid which had MIC of 0.50 and 0.25 .mu.g/mL against Escherichia coli (NCTC 1048) and Staphylococcus aureus (Oxford), resp.

IT **141060-97-1P**
RL: BAC (Biological activity or effector, except adverse); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)
(prepn. of, as antibiotic)

RN 141060-97-1 CAPLUS

CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-[[(2-amino-4-thiazolyl)(methoxyimino)acetyl]amino]-8-oxo-3-(tetrahydro-2-furanyl)-, 2-(ethoxycarbonyl)-2-butenyl ester, [6R-[2(Z),3(S*),6.alpha.,7.beta.(Z)]]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.



also broader than R3

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